

AUTHOR: Gnusin, N. P.

76-32-6-16/46

TITLE: Determination of the Current Distribution in an Electrolyte
and on the Electrodes by the Double Probe Method (Opredeleniye
raspredeleniya toka v elektrolite i na elektrodakh metodom
sdvoyennogo zonda)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 6,
pp 1292 - 1298 (USSR)

ABSTRACT: The first experiments in this field were conducted by Adams
(Ref 1) with metallic probes. This method was then used by
Lukens (Ref 2), it was further developed by N.P.Fedot'yev and
A.I.Yevstyukhin (Ref 3) and by Piontelli and Bianchi (Ref 4).
It was employed in a modified manner by V.P.Mashovets (Ref 5),
and according to another method worked out by Steiner (Ref 6).
The method described in this paper is free from the shortcomings
of the above mentioned ones. It uses two stable fixed electrodes,
as that by Steiner. The pertinent equations are given in the
theoretical foundation of the method. A special rectangular
through is mentioned in connection with the calibration of the
probe. The problem of a shallow electric field is considered

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Determination of the Current Distribution in an Electrolyte and on the Electrodes by the Double Probe Method 76-32-6-16/46

for the determination of the current distribution on the electrodes. The respective equations and a figure of the measuring arrangement are given. Explanations concerning possible sources of errors and their calculation are given. According to the fundamental formula the current density at an arbitrary point of the electrode is proportional to the potential difference at the probe. According to the method described it is possible to determine the current distribution for arbitrary parts of the current field without constructing a network of equipotential lines for the entire current field. Other properties of the current field can also be determined, as the slope of the current line towards the electrode, the magnitude of the vector of current density, from which, furthermore, the specific capacity at the passage of current can be determined. There are 3 figures, 1 table, and 7 references, 2 of which are Soviet.

Card 2/3

Determination of the Current Distribution in an 76.32.6.16/46
Electrolyte and on the Electrodes by the Double Probe Method

ASSOCIATION: Institut inzhenerov transporta, Gomel' (Gomel', Institute of
Transport Engineers)

SUBMITTED: January 23, 1957

1. Electrolytes--Electrical properties 2. Electrodes--Electrical
properties 3. Electric fields

Card 3/3

30V/32-25-5-23/56

8(2)
AUTHORS: Gnusin, N. P., Belova, Z. I.

TITLE: Measurement of the Specific Electrical Conductivity of
Electrolytes with the Aid of Direct Current (Izmereniye udel'noy
elektroprovodnosti elektrolitov s pomoshch'yu postoyannnogo toka)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 5, pp 594-596 (USSR)

ABSTRACT: The method under review is based on the determination of the potential difference between probes introduced into the electrolytic cell which is filled with the electrolyte to be investigated. The cell features special current supply electrodes for the generation of an electric field in the electrolyte. As compared to other (Ref 1) cell constructions suggested for the same purpose, the present cell is of a simple design. It consists essentially of a fork-shaped container (Fig 1) connected with the electrodes by two small tubes, while other two small tubes terminating as capillaries, are the probes. The electric circuit diagram for the measurement of the specific electrical conductivity (Fig 2) consists of an operating and a measuring diagram. The former contains the direct current source, electrolyte cell, a standard resistor, a milliamperemeter and a rheostat. The measuring circuit

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SOV/32-25-5-23/56

Measurement of the Specific Electrical Conductivity of Electrolytes by the
Aid of Direct Current

Diagram establishes the connection of the probes with the potentiometer. Before determining the specific electrical conductivity, the cell constant must be found (Table 2 for two cells). Measurements of the influence exerted by a reversal of the current direction (Table 1) showed, as was observed by other authors, that there is no influence upon the measuring results. There are 2 figures, 2 tables, and 1 reference.

ASSOCIATION: Belorusskiy institut inzhenerov zheleznodorozhnogo transporta
(Belorussian Institute of Railroad Engineers)

Card 2/2

GENSIN, N.P.

Nature of the throw power of electrolytes. Izv.vys.ucheb.zava; khim.1
khim.tekh. 3 no.4:642-648 '60. (MIRA 13:9)

1. Belorusskiy institut inzhenerov zheleznodorozhnogo transporta,
kafedra khimii.
(Electrolytes) (Polarization (Electricity))

78217
SOV/80-33-3-18/27

5.4600

AUTHOR: Gnusin, N. P.

TITLE: The Relation Between Voltages in Electrolyzers With Similar Electric Fields

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 3, pp 613-615 (USSR)

ABSTRACT: The voltage balance of two fields, in electrochemically similar electrolytic cells, is expressed by Eqs. (1) and (2), where ΔU is cell voltage; ΔU_{ohm} , ohmic voltage drop in the electrolyte; $E_{\text{decomp.}}$, decomposition voltage of the electrolyte; η_a and η_c , anodic and cathodic polarization values.

$$\Delta U' = \Delta U'_{\text{ohm}} + \eta'_a - \eta'_c + E'_{\text{decomp.}} \quad (1)$$
$$\Delta U'' = \Delta U''_{\text{ohm}} + \eta''_a - \eta''_c + E''_{\text{decomp.}} \quad (2)$$

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The Relation Between Voltages In Electrolyzers
With Similar Electric Fields

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30V/60-33-3-18/27

The anode and cathode polarization curves of the
electrolyte used in two experimental similar cells
corresponded to the equations:

$$\eta_a = a_a + b_a \log D_a; \quad \eta_c = a_c + b_c \log D_c$$

where D is current density at electrodes; a and b
are constants. Introducing the equations of
similitude of electric fields, and after some
substitutions and transformations (taking into
consideration that $E'_{\text{decomp.}} = E''_{\text{decomp.}}$ for the
same electrolyte used in both cells), Eq. (1) gave:

$$\Delta U' - \Delta U'' = (b_a - b_c) \log \frac{D'}{D''}$$

If electrochemically similar flat electrolytic
cells have the same current ($I'_o = I''_o$) regardless of their
geometric dimensions, the current densities at any similar
points of the electric fields are in inverse ratio to

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The Relation Between Voltages in Electrolyzers
With Similar Electric Fields

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SOV/80-33-3-18/27

the linear dimensions of the cells. Hence,

$$\Delta U' - \Delta U'' = (b_a - b_c) \log \frac{l_o''}{l_o'}$$

where l_o is any linear parameter of the cell. The
above equation was found to be true in a series
of experiments. There is 1 figure; and 1 Soviet
reference.

SUBMITTED: October 24, 1958

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5.4600

78218
SOV/80-33-3-19/47

AUTHOR: Gnusin, N. P.

TITLE: Oscillographic Modeling of Electric Fields in Electrolytes

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 3, pp 616-622 (USSR)

ABSTRACT: An oscillographic method of modeling electric fields in electrolytes is described. Oscilloscope EO-7 and alternating current are used. Unlike the direct modeling which requires the painstaking selecting of the electrode material and electrolyte composition, the author's method uses any of the standard electrode-electrolyte systems and creates artificial similarity conditions. The polarization curve (current density vs potential) of the sample electrolytic cell was traced on the oscilloscope screen. Similarity conditions were then created in the model cell by placing a triple and single probe (connected with the vertical and horizontal deflecting

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Oscillographic Modeling of Electric
Fields in Electrolytes

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SOV/ 80-33-3-19/47

plates of the oscilloscope) as well as the electrodes in such reciprocal positions that the movement of the triple probe along a vertical to the wall of the cell reproduced the curve traced on the oscilloscope screen. The finding of the suitable positions for the probes and electrodes required about 10 min. The theory of the method and its application is described in detail. Voltmeter LV-9 and voltage stabilizer ST-250 were used in the experiments. There are 4 figures; and 1 Soviet reference.

SUBMITTED: October 24, 1958

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S. 4700

25062
S/080/60/033/010/014/029
D216/D306

AUTHOR: Gnusin, N.P.

TITLE: On evaluating different determination methods of diffusion abilities of electrolytes using the theory of equalities

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 10, 1960,
2268 - 2278

TEXT: The large quantity of experimental data, obtained by studying different electrolytes and by different methods in order to determine the diffusion ability of electrolytes has not been completely applied in engineering and scientific practice. This gap may be eliminated with the help of the theory of equalities which can reduce all the data to a common scale and establish in a given case the correct way of treating the experimental data. The equality theory for geometrically suitable electrolytic cells used in practical electrolysis, establishes the following relation: $T = f_1(\theta)\theta(0)$ X

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25062

S/080/60/053/010/014/029

D216/D306

On evaluating different ...

where T is some indicator of uniformity (or non-uniformity) of current distribution, and Θ is a criterion of electrochemical equality given by

$$\Theta = \frac{\alpha_{K, cp}}{\rho l_o}, \quad (1')$$

where $\alpha_{K, cp}$ is the mean polarizability of electrode, ρ - the specific resistance of electrolyte, and l_o - an arbitrary linear dimension. If this is rewritten:

$$\Theta l_o = \frac{\alpha_{K, cp}}{\rho} = R_i,$$

then R_i is independent of the geometrical characteristics of the cell, since the values of $\alpha_{K, cp}$ and ρ are connected with properties of the electrode and electrolyte. Hence not only form but di-

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25002
 S/080/60/033/010/014/029
 D216/D306

On evaluating different ...

mensions as well ($\ell_0 = \text{const.}$) of cells are same giving the equalities:

$$T = f_2(\Theta \ell_0) = f_2\left(\frac{\alpha K_i c_p}{\rho}\right) = f_2(R_i) \quad (2)$$

from which it follows that uniformity of current distribution is a function of diffusion ability R_i , i.e. of the quantity which is not connected with geometric parameters of the cell. The author then gives the experimental determination of the criterion of diffusion abilities using different methods. The compositions of electrolytes and conditions are given below:

Electrolyte No.	Composition (in g/l)	Current density (A/dm ²)
1	Nickel sulphate 250 + sodium sulphate 30 + boric acid 20	0.5
2	Copper sulphate 200 + sulphuric acid 50	1.0
3	Copper sulphate 50 + sulphuric acid 200	0.6

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D216/D306

On evaluating different ...

The results obtained by employing different methods for establishing the connection between the indicators of uniformity of current distribution and criteria of electrochemical equalities of different cells show that assessment of uniformity or non-uniformity of current distribution on the electrodes could be reduced to the methods of measuring the diffusivity index, and characterizing the properties of electrolyte, not the geometrical properties of the cell. There are 10 figures, 4 tables and 4 Soviet-bloc references.

SUBMITTED: November 4, 1959

Card 4/4

GNUSIN, N.P.

Measure of the throwing power as determined by a metal. Zhur.prikl.
khim. 33 no.10:2364-2365 O '60. (MIRA 14:5)
(Electrolytes)

b7b4

S/076/60/034/007/027/042/XX
B004/B068

26.2522 1273.1241

AUTHOR: Gnusin, N. P.

TITLE: Theory of Electric-field Simulation in Electrolytes

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 7,
pp. 1563 - 1570

TEXT: The aim of this study was to find a general solution for the simulation of electric fields in electrolytes by means of the similarity principle. The equations $\operatorname{div} \vec{D} = 0$; $\vec{D} = \vec{E}/\rho$; $\operatorname{curl} \vec{E} = 0$ are written. \vec{D} is the current-density vector; \vec{E} is the voltage vector; ρ is the resistivity of the electrolyte. The Laplace equation $\partial^2 V/\partial x^2 + \partial^2 V/\partial y^2 + \partial^2 V/\partial z^2 = 0$ (4) is written for homogeneous media, and the following boundary conditions are established: 1) for the electrolyte - insulator interface (container wall, air): $\partial V/\partial n = 0$ (5) (n is the normal line to the interface); 2) for the electrolyte - electrode interface: $\gamma = f(D_n) + a$ (6), where γ is the polarization, D_n is the current

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Theory of Electric-field Simulation in S/076/60/034/007/027/042/XX
Electrolytes B004/B068

density, and a is a constant. A transformation to dimensionless coordinates follows: $x = x_0 X$; $V = V_0 U$; $D_n = D_0 \lambda_n$ (7), and the equation $H = F(\lambda_n) + A$ (10) is obtained. This relation is the equation for the polarization curve expressed in dimensionless polarization and current-density units. Since the polarization is the only limitation when the similarity constants are chosen, the following conclusion is drawn: If two electrolytes in geometrically similar electrolyzers are to have similar electric fields, it is necessary and sufficient for the functions characterizing the relation between dimensionless polarization and dimensionless current density to be equal to each other or to differ only by a constant value. Criterial equations for the fields in the electrolytes are derived by assuming a homogeneous medium ($\rho = \text{const}$) and a linear dependence of polarization on the current density: $\gamma = kD_n + a$ (13), or $\alpha = d\gamma/dD_n = k = \text{const}$ (14). In the dimensionless form, the equation $Vl_0/I_0 = F(x/l_0, y/l_0, z/l_0, l_1/l_0, l_2/l_0, \dots, l_n/l_0, \alpha_k/l_0, \alpha_a/l_0)$ (22) is obtained. l_0 is any dimension of the

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Theory of Electric-field Simulation in
Electrolytes S/076/60/034/007/027/042/XX
B004/BCG

electrolyzer, and I_o is the current density. Moreover, a function for the modulus Dl_o^2/I_o of the current-density vector D and for the non-uniform current distribution on the electrode ($T_1 = dD_n l_o / dI D_n$) is derived. G. V. Forsblom, V. P. Mashovets, L. I. Kadamer, and A. N. Frumkin are mentioned. There are 8 references: 5 Soviet, 1 US, 1 British, and 1 German.

ASSOCIATION: Belorusskiy institut inzhenerov zheleznodorozhnogo transporta BSSR, Gomel' (Belorussian Institute of Railroad Engineers of the BSSR, Gomel')

SUBMITTED: October 13, 1958

Card 3/3

GNUSIN, N.P.

Experimental verification of the conditions for model testing electric
fields in electrolytes. Zhur. fiz. khim. 34 no.8:1717-1720 Ag '60.
(MIRA 13:9)

l. Belorusskiy institut inzhenerov zheleznodorozhnogo transporta
Gomel'.
(Electrolytes) (Electric fields)

S/076/60/034/009/024/041XX
B020/B056

AUTHORS: Gruzin, N. P., Nikonovich, N. I., and Galaganov, V. A.

TITLE: Experimental Verification of the Correctness of the Form of Critical Equations of Electric Fields in Electrolytes

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 9,
pp. 1911 - 1915

TEXT: In a paper on the theoretical study of problems of simulation (Ref. 1), the general form of critical equations of different kinds for electric fields in electrolytes has been derived in the form

$T = F (l_1/l_o, l_2/l_o \dots l_n/l_o, \alpha_{c.av}/\rho l_o, \alpha_{a.mean}/\rho l_o)$ (1),
where $l_o, l_1, l_2, l_3 \dots, l_n$ are the geometric parameters characterizing the form of the electrolyzer; $\alpha_{c.av}$ and $\alpha_{a.av}$ are the mean values of the cathodic and anodic polarizability, and ρ is the resistivity of the electrolyte. Thus, the quantity T

$D_{max}/D_{min} ; D_{max}/D_{mean}$ et al.

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Experimental Verification of the Correctness
of the Form of Critical Equations of Electric
Fields in Electrolytes

S/076/60/034/009/024/041XX
B020/B056

may be substituted, where D is the respective current density. It was the aim of the present work experimentally to verify the equation (1) by geometrically similar slit cells, which are sufficiently characterized by the dimensionless parameter h/l_0 , where h is the width, and l_0 the length of the cell. As the effect of anodic polarizability upon the cathodic distribution of the current is excluded, the critical equation has the form

$$T = F(h/l_0, \alpha_{c.av}/l_0 \varphi).$$

For geometrically similar slit cells, in which $h/l_0 = \text{const.}$, the critical equation may be written down in the form

$$T = F(\alpha_{c.mean}/l_0 \varphi) \quad (2),$$

from which it follows that, for geometrically similar slit cells, every uniformity (or non-uniformity) factor of current distribution must be a unique function of the criterion of electrochemical similarity. For the purpose of experimentally verifying the critical equation (2), four slit cells with constant $h/l_0 = 0.3$ were used. The solutions were provided by electrolytes of different compositions at different temperatures with

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Experimental Verification of the Correctness of S/076/60/034/009/024/041XX
the Form of Critical Equations of Electric Fields in Electrolytes B020/B056

different conductivity and different polarization characteristics. The composition of the electrolytes used is given. The polarizability $\alpha_{c.av}$ was calculated from an equation, and the resistivity was measured. The results obtained when investigating the various electrolytes are given in Figs. 1 and 2, viz. in form of curves of the dependence of various current distribution uniformity factors T upon the criterion of the electrochemical analogy $\alpha_{c.av}/\beta_{l_0}$. The pre-determined functional relation by means of the similarity theory between the various current distribution uniformity characteristics and the criterion of the electrochemical similarity for geometrically similar slit cells is confirmed by all curves given in Figs. 1 and 2. There are 2 figures, 1 table, and 2 Soviet references.

ASSOCIATION: Belorusskiy institut inzhenerov zheleznyodorozhnogo transporta
(Belorussian Institute of Railroad Engineers)

SUBMITTED: October 13, 1958

Card 3/3

CHUSIM, N.P.

Effect of anode polarizability on cathodic current distribution.
Izv.vys.ucheb.zav.;khim.i khim.tekh. 4 no.3:446-451 '61.

(MIRA 14:10)

1. Belorusskiy institut inzhenerov chelznodorozhnogo
transporta, kafedra khimii. Izv.vys.ucheb.zav.;khim.i khim.
tekh. 4 no.3:446-451 '61.

(MIRA 14:10)

(Polarization(Electricity))
(Electrodes)

GNUSIN, N.F.

Effect of the specific resistance of an electrolyte and of the proportional change in the linear dimensions of electrolysis on uniform current distribution. Izv.vys.ucheb.zav.;khim.i khim.tekh. 4 no.4:639-642 '61. (MIRA 15:1)

1. Belorusskiy institut inzhenerov zheleznodorozhnogo transporta,
kafedra khimii.

(Electrolysis)

8/155/61/004/005/001/005
E632/E514

AUTHOR: Gorsjin, N. P.

TITLE: Screening effect of the probe in the measurement of the capacitive and ohmic components of the impedance of a double layer

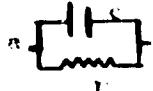
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy SSSR,
Khimika i khimicheskaya tekhnologiya, v.4, no.5, 1961,
760-764

TEXT: It is stated that all the existing methods for measuring the capacitive and ohmic components of the impedance of a double layer on electrode surfaces meet with serious difficulties at frequencies in excess of 20 kc/s. In the probe method described by the present author in Ref. I (Zh. fiz. khimii, 32, 689, 1958) the screening effect of the capillary is one of these difficulties. The point is that when the probe is in contact with the electrode it screens a part of the electrode and hence instead of the true potential one obtains an effective potential. In the present paper the author describes a simple method of studying the screening effect of the capillary. The device

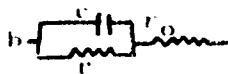
Card 1/3

Screening effect of the probe ... S/155/61/004/005/002/005
E052/1514

employed to measure the impedance of a double layer is illustrated schematically in Fig 2. The copper electrodes were placed in a solution consisting of a mixture of copper sulphate (250 g/l) and sulphuric acid (100 g/l). The measurements were carried out at room temperature and the probes were made from a glass capillary. The results obtained for the impedance depend on the dimensions and the position of the probe and also on the method of preparation of the electrode. All the measurements were carried out with the same probe and under the same conditions. It was found that the maximum possible frequency which can be used can be increased by reducing the thickness of the capillary. When the capillary is in contact with the electrode the equivalent circuit is of the form



while in the case where there is an intervening electrolyte between the probe and the electrode the equivalent circuit is

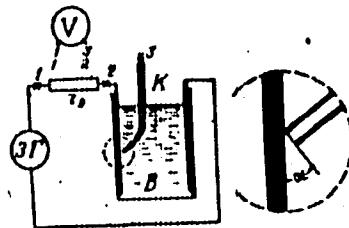


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Screening effect of the probe ... S/153/61/004/005/002/005
E032/E514

The correctness of this representation is confirmed experimentally. The final conclusion is that when all these effects are taken into account the upper frequency limit can be extended to 50-70 kc/s. There are 5 figures and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Kafedra obshchey khimii, Belorusskiy institut inzhenerov zheleznodorozhnogo transporta
(Department of General Chemistry, Belorussian Institute of Railroad Transportation Engineers)



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Fig. 2

GNUSIN, N.P.

Modeling of electric fields in electrolytes by means of the EI-12
electronic integrator. Zhur.prikl.khim. 34 no.10:2275-2281 O '61.
(MIRA 14:11)

(Electrolytes) (Electric fields)

GNUSIN, N.P. (Gomel')

Secondary distribution of current in a slit cell. Zhur.fiz.
khim. 35 no.8:1738-1744 Ag '61. (MIRA 14:8)

1. Belorusskiy institut inzhenerov zheleznodorozhnogo transporta.
(Electrolysis)

GNUSIN, N.P.; BELOVA, Z.I.

Copper plating of steel parts in oxalate electrolytes. Zhur.
prikl.khim. 34 no.9:2038-2043 S '61. (MIRA 14:9)
(Copper plating)

GMUSIN, N.P.; SAVCHIK, D.V. (Gomel')

Probe method of measuring the impedance and phase shift angle
of the double layer. Zhur.fiz.khim. 35 no.9:2151-2152 '61.
(MIRA 14:10)

1. Belorusskiy institut inzhenerov zheleznodorozhnogo
transporta.

(Physical measurements)

GNUSIN, N.P. (Gomel)

Measurement of the impedance of a copper electrode in an acid
electrolyte. Zhur.fiz.khim. 35 no.10:2217-2222 O '61.

1. Belorusskiy institut inzhenerov zheleznodorozhnogo transporta.
(Electride, Copper) (MIRA 14:11)

CNUSIN, N.P.

Solution of certain problems of equilibrium in electrolyte solutions by means of electric models. Izv.vys.ucheb.zav.;khim.i khim.tekh. 5 no.2:225-230 '62. (MIRA 15:8)

1. Belorusskiy institut inzhenerov zheleznodorozhnogo transporta,
kafedra khimii.
(Electrolyte solutions) (Chemical equilibrium)

GNUSIN, N.P. (General)

Criterional equation for the relation between primary and
secondary current distribution. Zhur. fiz. khim. 36 no.6
1269-1275 Je'62 (MELA 123.)

1. Belorusskij institut radiofiziki i radiochimic, Grodno,
Belarus.

GNUSIN, N. S., ZAITOVITSKIY, Yu. .

A-40 ammonium chloride electrolyte for zinc plating. Inv. 30
AN SSSR no.7 Ser. khim. nauk no.28117-120 1964 (MIRA 18:1)

1. Khimiko-metallurgicheskiy Institut Sibirekogo otdeleniya
AN SSSR, Novosibirsk.

GNUSIN, N.P.; ZOLOTOVITSKIY, Ya.M.; BELOVA, Z.I.; NIEONOVICH, N.I.

Concentrated ammonium chloride electrolytes for zinc
plating. Zhur. prikl. khim. 37 no.2:330-337 F '64.

(MIRA 17:9)

GRUDIN, N.N.; RODIN, A.G.

Graphic method of calculation of the parameters of impedance
of a double layer according to the frequency characteristic
of its modulus. Izv. SO AN SSSR no.3: Ser. khim. nauk no.1:
120-123 '65. (MCFA 18:8)

1. Institut fiziko-khimicheskikh osnov pererabotki mineral'noego syr'ya Sibirekogo otdeleniya AN SSSR, Novosibirsk.

GOVARDENOV, N.N.; VYAZNIKOV, N.I.

Approximate evaluation of the true surface of compact electron deposits
by the profile recording method. Zashch. met. i noz. 1430-150. 31-Ag-165.
(MEKA 1818)

1. Institut fiziki i khimicheskikh struktur pri reaktivnykh protsessakh
sver'ya Sibirskego otdeleniya AN SSSR.

GNUSIN, N.P.; Prinimal uchastiye BCK, R.Yu.

Valve effect of diffusion for a metal immersed in a solution of its ions.
Zhur. fiz. khim. 39 no.3:780-783 Mr '65. (MIRA 18:7)

1. Khimiko-metallurgicheskiy institut Sibirskogo otdeleniya AN SSSR.

GOLIKH, N.I.; PEVNITSKAYA, N.V.

Electrochemical properties of technical cation-exchange membranes.
Izv. SO AN SSSR no.7 Ser. Khim. nauk no.2(3) p. 165.

1. Institut fiziko-khimicheskikh issledovaniy pererabotki prirodnih resorsov
syste'ma Sibirskogo otdeleniya AN SSSR, Novosibirsk. Submitted
June 26, 1964.

GRIBENYUK, V.D.; GRUSIN, N.P.

Methods for measuring the specific conductivity of ion-exchange materials in the granulated state. Izv. SO AN SSSR no. 7 Ser. khim. nauk no. 2 9-12 '65.

(VIP. 18:02)

1. Institut fiziko-khimicheskikh osnov pererabotki mineral'nogo syr'ya Sibirskogo otdeleniya AN SSSR, Novosibirsk. Submitted October 14, 1964.

GNEVIN, N.P.; EDWARSKY, N.Ya

Distribution of electrodeposited metals along the height
of a rough layer. Zhur. fiz. chim. 39 no. 10, 244-255 (1965).
(MERA 18:12)

I. Novosibirskiy khimiko-metallurgicheskiy institut. Submitted
May 30, 1964.

GNOZIN, N.P.; KOVARSKIY, N.Ya.; FEDOT'YEV, N.P.

Roughness and polarization curves in the electrodeposition
of copper from acid sulfate solutions. Zhur.prikl.khim. 38
no.11:2464-2469 N '65. (MIRA 18:12)

1. Submitted December 4, 1964.

PEVNITSKAYA, M.V.; GNUSIN, N.P.; LAVROVA, T.A.

Electric ion transport through the cation-exchange membrane in
mixed salt solutions. Izv. SO AN SSSR no.7 Ser. khim. nauk
no.2:13-18 '65. (MIRA 18:12)

1. Institut fiziki khimicheskikh sogov pererabotki mineral'nogo
syr'ya Sib'skogo otdeleniya AN SSSR, Novosibirsk. Submitted
November 2, 1964.

GNUSIN, N.P.; KOVARSKIY, N. Ya.

Distribution of electrically deposited metals along the height
of the rough layer. Izv. SO AN SSSR no. 10. Ser. tekhn. nauk
no. 3:154-157 '65 (MIRA 19:1)

1. Institut fiziko-khimicheskikh osnov pererabotki mineral'nogo
syr'ya, Novosibirsk. Submitted March 9, 1965.

L 23888-66 EWT(m)/EWA(d)/T/EWP(t) IJP(c) JD

ACC NR: AP6008629

SOURCE CODE: UR/0365/65/001/006/0709/0712

• 53

B

AUTHORS: Bartenev, V. Ya.; Varentsov, V. K.; Gnusin, N. P.

ORG: Institute for Physico-Chemical Bases for Processing of Mineral Raw Materials, Academy of Sciences, SSSR, Siberian Section (Institut fiziko-khimicheskikh osnov pererabotki mineral'nogo syr'ya Akademii nauk SSSR, Sibirskoye otdeleniye)

TITLE: Cadmium plating from a sulfate solution in the presence of sapal

21 19

SOURCE: Zashchita metallov, v. 1, no. 6, 1965, 709-712

TOPIC TAGS: cadmium, electroplating, cadmium sulfate, surface active agent, cathode polarization

ABSTRACT: This investigation was conducted to extend the investigations of M. A. Loshkarev and L. V. Mark (Tr. Dnepropetrovskogo khim-tekhn. in-ta, 1958, vyp. 6, 21) and, in particular, to study the effect of surface active agents on the properties of cadmium plating derived from a sulfate plating solution. Sapal, Nekal, detergent DNS, and dispersion agent NF were used as surface active agents. The cathode polarization, covering ability, current yield, and concentration polarization during the process of electroplating of cadmium from an aqueous cadmium sulfate solution were studied as a function of the cadmium ion and of sulfuric acid concentration, and of the nature and concentration of the different surface active agents. The experimental results are presented graphically (see Fig. 1).

UDC: 621.357.7

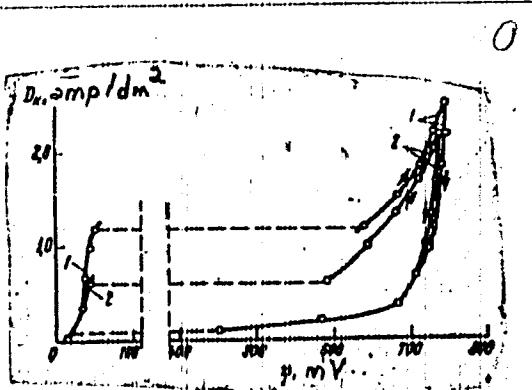
Card 1/2

2

L 23888-66

ACC NR: AP6008629

Fig. 1. Dependence of cathodic polarization (η) on the current density for different cadmium concentrations.
1 - $\text{CdSO}_4 = 0.5\text{N}$, $\text{H}_2\text{SO}_4 = 0.1\text{N}$,
sapal = 2 g/liter; 2 - $\text{CdSO}_4 = 0.25\text{N}$, $\text{H}_2\text{SO}_4 = 0.1\text{N}$, sapal = 2 g/liter.



It was found that best results are obtained at the concentration of $\text{CdSO}_4 = \text{concentration of } \text{H}_2\text{SO}_4 = 0.5\text{N}$; sapal concentration of 5--10 g/liter. Current density $D_k \approx 2\text{--}3 \text{ amp}/(\text{decimeter})^2$ and temperature 18--20°C were used. Orig. art. has 5 graphs.

SUB CODE: 07/ SUBM DATE: 05Apr65/ ORIG REF: 007

Card 2/2dd

ACC NR: AR7004855

SOURCE CODE: UR/0137/66/000/010/G028/G028

AUTHOR: Gnusov, R. N.; Konin, M. K.; Mezhburd, V. I.; Naumov, N. V.;
Tseyar, V. A.

TITLE: Experimental investigation of an asynchronous pump for pumping lead-bismuth alloy

SOURCE: Ref. zh. Metallurgiya, Abs. 10G205

REF SOURCE: Sb. Nauchno-tekhn. stately. N.-i. elektrotekhn. in-t (Tellin),
vyp. 2, 1965, 119-125

TOPIC TAGS: liquid metal pump, lead alloy, bismuth alloy, hydraulic efficiency

ABSTRACT: An investigation has been made of the operation of the ASN-3 pump used to pump eutectic lead-bismuth alloy. The pump capacity is $0.43 \cdot 10^{-3}$ m³/sec, the pressure is 1.2 kg/cm² at temperatures of 350 C, and the hydraulic efficiency of the pump is 1.2%. The characteristics of the pump are studied, Orig. art. has: 5 figures. A. Tseydler. [Translation of abstract] [NT]

SUB CODE: 11/

Card 1/1

UDC: 669.4/.76.018.9

GRUTIKOV, P.I.

GURIN, A.S.; KUZ'MIN, A.A.; DROZDOV, L.V.; MOGILEVSKIY, M.M.; GOLOVESH-KIN, V.G. [deceased]; PROLOV, A.A.; GRUTIKOV, P.I., podpolkovnik; SOLOMONIK, R.L., tekhnicheskiy redaktor.

[Telephone] Telefoniia. Moskva, Voennoe izd-vo Ministerstva obozrony SSSR, 1954. 583 p. [Microfilm] (MLRA 7:11)
(Telephone)

TIMOFEYEV, Boris Aleksandrovich; CHUTINOV, P. I., podpolkovnik, redaktor,
ZUDINA, M.P., tekhnicheskij redaktor

[New multichannel telephone communication system of the U.S.Army]
Novye mnogokanal'nye telefonnye sistemy sviazi v Armii SSSR.
Moskva, Voen.izd-vo M-va obr. SSSR, 1957. 109 p. (MIRA 10:11)
(Telephone)

MOTORICHEV, Ivan Aleksandrovich; SMIRNOV, Valentin Nikoleyevich; GUR'YANOV,
P.I., podpolkovnik, redaktor; SRIBNIS, N.V., tekhnicheskiy redaktor

[Visual aids for radar work] Magliadnye posobiiia po radiolokatsii.
Moskva, Voen.izd-vo M-va obor. SSSR, 1957. 151 p. (MLKA 10:10)
(Radar)

ANISIMOV, Anatoliy Georgiyevich; Gnutikov, P.I., podpolkovnik, red.;
MEDNIKOVA, A.N., tekhn.red.

[Cross interference during the reception of radiotelephone signals]
Perekrestnye pomekhi pri prieme radiotelefonnykh signalov. Moskva,
Voen.izd-vo M-va oborony SSSR, 1958. 68 p. (MIRA 11:4)
(Radiotelephone--Interference)

GLUZHIN, Isaak Yefimovich, SHCHERBAKOV, Aleksey Arsen'yevich, SUTIKOV, P. I.,
red.; BABOCHKIN, A. T., tekhn. red.

[Manual for training radiotelegraphers] Poreobis po obucheniiu radio-
telegrafistov. Moskva, Voen. izd-vo M-va obor. SSSR, 1958. 109 p.
(MIRA 11:8)

(Radiotelegraph--Operators' manuals)

Gvozdets, V. A.

PLESTSOV, Konstantin Mikhaylovich; GNUTIKOV, P.I., red.; MEZHGERITSKAYA, N.P.,
tekhn.red.

[Military communications men] Voennye sviazisty. Voen.
izd-vo M-va obor. SSSR, 1958. 201 p. (MIRA 11:2)
(Russia--Army--Signaling)

LOBANOV, Nikolay Leont'yevich; GNUTIKOV, P.I., red.; KRASAVINA, A.M.,
tekhn.red.

[Detection of radio signals] Detektirovaniye radiosignalov.
Moskva, Voen.izd-vo M-va obor.SSSR, 1960. 85 p.
(MIRA 13:10)
(Radio detectors)

DAVYDENKO, Yu.I.; NECHAYEV, N.T.; GNUTIKOV, P.I., red.; MEDNIKOVA, A.N.,
tekhn.red.

[Special features of microwave propagation] Osobennosti ras-
prostraneniia metrovых радиоволн. Moskva, Voen.izd-vo M-va
obor.SSSR, 1960. 170 p. (MIRA 13:?)
(Microwaves)

CHUTIKOV, P.I., polkovnik, red.; SOLOMONIK, R.L., tekhn.red.

[Manual on the design and operation of the ST-35 telegraph apparatus] Telegrafnyi apparat ST-35; rukovodstvo po ustroistvu i eksploatatsii. Moskva, Voen.izd-vo M-va obor.SSSR, 1960.
180 p. (MIRA 13:6)

1. Russia (1923- U.S.S.R.) Ministerstvo obrony.
(Teletype--Equipment and supplies) (Communications, Military)

KHARA, Valentin Vasil'yevich; NIKITIN, Georgiy Mikhaylovich; Gnutikov,
P.I., red.; MYASNIKOVA, T.P., tekhn.red.

[Radio engineering demonstrational devices and study aids] Uchebno-
demonstratsionnye posobiia po radiotekhnike. Moskva, Voen.izd-vo
M-va obor.SSSR, 1960. 251 p. (MIRA 13:12)
(Radio--Study and teaching)

LISTOV, Konstantin Mikhaylovich; TROFIMOV, Kirill Nikolayevich. Prinimali
uchastiye: GRISHIN, M.G.; SOWCHIK, S.S.; SAVODNIK, A.V.; ONUTIKOV,
P.I., polkovnik, red.; STRAL'NIKOVA, M.A., tekhn.red.

[Radio and radar engineering and its use] Radio i radiolokatsionnaya
tekhnika i ikh primenenie. Moskva, Voen.izd-vo M-va obor.SSSR, 1960.
423 p. (MIRA 13:4)

(Radio) (Radar)

ARONE, Moisey Naumovich; Gnutikov, P.I., polkovnik, red.; SOKOLOVA, O.F.,
tekhn.red.

[Radio communication via meteorites] Meteornaya radiosviaz'.
Moskva, Voen.izd-vo M-va obor.SSSR, 1960. 106 p.

(MIRA 14:2)

(Radio, Shortwave)

VERZUNOV, M.V.; GNUTIKOV, P.I., red.; SRIBNIS, N.V., tekhn. red.

[Radiotelegraphy] Radiotelegrafirovanie. Moskva, Voen. izd-vo M-va
oborony SSSR, 1961. 78 p. (MIRA 14:7)
(Radiotelegraph)

EL'B, N.K., inzh.; GNUTOV, I.A., inzh.

Concrete operations by the Mamakan Hydroelectric Power Station
Construction Trust. Gidr.stroi. 31 no.5:ll-15 My '61.
(MIRA 14:6)
(Mamakan Hydroelectric Power Station—Concrete construction)

СВЕДЕНИЯ, ЧАСТЬ

Effectiveness of using photolithography communication techniques
in printing central newspapers in large editions in the U.S.S.R.
Study sheet, first, sviazi, no.16263-265 '66. (MIRA 1740)

Д. Высоковязкий заочный электротехнический институт связи.

1970, No. 1.

"The Early Recognition of a cosmic Danger."

Nestnik vererologii i dermatologii (almanac of endocrinology and dermatology),
No 1, January-February 1970, (Moscow), Moscow.

"Fleas Infestations of the Penins."

Vestnik verorolezii i dermatologii (Bulletin of entomology Dermatology),
vol. Januar-Februar 1954, (Kievper), Moscow.

CHUZDEV, G.N.; DATSKOVSKIY, B.M.

[Early diagnosis and over-all treatment of skin tuberculosis;
manual for the practicing physician] Ranniaia diagnostika
i kompleksnoe lechenie tuberkuleza kozhi; v pomoshch' prakti-
cheskому vrachu. Perm. Zvezda, 1959. 43 p. (MIRA 13:8)
(TUBERCULOSIS)

GNUZDEV, G.N.

Combined therapy for patients with skin tuberculosis. Vest.derm.
i ven. 33 no.6:30-35 M-D '59. (MTRA 13:12)
(SKIN-TUBERCULOSIS)

GNUZDEV, G.N.

[Compound treatment of tuberculosis of the skin] Kompleksnoe
lechenie bol'nykh tuberkulosom kozh. Perm', 1960. 158 p.
(MIRA 13:12)

(SKIN--TUBERCULOSIS)

KAMENSKAYA, N.V., kand. gist. navuk; ONYAUKO, V.O., kand.gist.navuk.

White Russia on the 40th anniversary of the Great October
Socialist Revolution. Vestsi AN BSSR Ser. fiz.-tekhn. nav.
no.3:5-15 '57. (MIRA 11:1)
(White Russia--Revolution, 1917-1921)

L 25772-65 EWT(m)/EPF(c)/ENG(v)/T/EWP(j)/EPN
RPL RWH/WW/MLK/TM
ACCESSION NR: AT5002666

Pc-4/Po-5/Pr-1/Pg-1, Pl-4

S/0000/64/000/000/0109/0114

415
412
B71

AUTHOR: Gnyp, N. P.; Kachan, A. A.; Kornev, K. A.; Kulik, N. V.; Chervyatsova, L. L.

TITLE: Study of the kinetics of the photochemical graft copolymerization of acrylonitrile to Kapron fiber

SOURCE: AN UkrSSR. Institut khimii vysokomolekulyarnykh soedinenii. Sintez i fiziko-khimiya polimerov; sbornik statey po rezul'tatam nauchno-issledovatel'skikh rabot (Synthesis and physical chemistry of polymers; collection of articles on the results of scientific research work). Kiev, Naukova dumka, 1964, 109-114

TOPIC TAGS: graft copolymerization, photochemical copolymerization, copolymerization kinetics, acrylonitrile copolymer, polycaprolactam, Kapton fiber, free radical

ABSTRACT: Experiments on the photochemically initiated graft copolymerization of acrylonitrile to polycaprolactam (Kapton) fiber were carried out to study the kinetics and energetic efficiency of the process. The polymerization was studied at 20-60°C in the vapor phase under UV irradiation from a mercury lamp and under monochromatic radiations at $\lambda=253.7$ and $365 \mu\text{m}$. The graft polymer contained not more than 2% homopolymer. The reaction rate decreased with reaction time and with an increase in temperature, and increased linearly with the square root of the

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ACCESSION NR: AT5002666

light intensity. The quantum yield of the process, calculated per amount of grafted acrylonitrile molecules, was shown to equal 1 for the wavelength 253.7 m μ and 2.5 for 365 m μ . The results indicate that irradiation at both effective wavelengths involves mainly cleavage of C-N bonds and formation of free radicals having the structure NH-CH₂-CH₂- and CH₂CH₂CO. Orig. art. has: 2 figures and 5 formulas.

ASSOCIATION: Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR (High polymer chemistry institute, AN Ukr.SSR)

SUBMITTED: 22Jun64

ENCL: 00

SUB CODE: OC, MI

NO REF Sov: 005

OTHER: 011

Card 2/2

L 51868-65 EWT(m)/EPF(c)/EWG(v)/EPR/EWP(f)/T PC-4/Pf-5/Pf-4/Pf-4/PE-4 SPL
RWH/WW/GS/RM S/0000/64/000/000/0113/0121

ACCESSION NR: AT5002667

AUTHOR: Gnyp, N. P.; Kachan, A. A.; Kornev, K. A.; Chervyatina, L.

TITLE: A study of the kinetics of the photochemical aftereffect during graft copolymerization of acrylonitrile onto a caprone fiber

SOURCE: AN UkrSSR. Institut khimii vysokomolekulyarnykh soedineniy. Sintez i fiziko-khimiya polimerov; sbornik statey po rezul'tatam nauchno-issledovatel'skikh rabot (Synthesis and physical chemistry of polymers; collection of articles on the results of scientific research work). Kiev, Naukova dumka, 1964, 115-121

TOPIC TAGS: acrylonitrile copolymer, caprone fiber, vapor phase grafting, ultraviolet light initiation, photochemical aftereffect, rate constant, activation energy, polymerization kinetics

ABSTRACT: Continuing previous experiments, which established that graft copolymerization of acrylonitrile to a caprone fiber can be initiated by quanta of ultraviolet light, the authors analyzed the kinetics of the photochemical aftereffect in vapor-phase grafting of acrylonitrile. They evolved a kinetic equation

$$x = \frac{2.3K_p C_n}{K_o} \ln(K_o C_n + 1)$$

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ACCESSION NR: AT5002667

which makes it possible to calculate the ratio of the rate constants at 20, 40 or 60°C. In the above equation, x = amount of grafted acrylonitrile at time t, K_P and K_T = rate constants for chain growth and termination, C₀ = concentration of monomer, and C = initial concentration of free radicals. Activation energies were calculated as 5.7 (apparent), 4.6 (chain growth) and 1.2 (chain termination) kcal/mol., respectively. Orig. art. has: 4 figures and 12 formulas.

ASSOCIATION: Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR (Institute of the Chemistry of High Polymers, AN UkrSSR)

SUBMITTED: 22Jun64

ENCL: 00

SUB CODE: 00, 00

NO REF Sov: 004

OTHER: 000

CI

LL
Card 2/2

ACCESSION NR: AP4012591

S/0021/64/000/002/0224/0226

AUTHOR: Kornyev, K. A. (Corresponding member); Gny*p, N. P.; Kachan, O. O.;
Chervyatsova, L. L.

TITLE: Photochemical initiation of graft copolymerization of acrylonitrile to
kapron fiber

SOURCE: AN UkrRSR. Dopovidi, no. 2, 1964, 224-226

TOPIC TAGS: kapron, acrylonitrile, nylon, graft copolymer, polyamide fiber
copolymer, polycaprolactam

ABSTRACT: Photochemically initiated graft copolymerization was carried out with acrylonitrile in the vapor phase to avoid formation of the homopolymer. The fiber was irradiated with unfiltered light of a mercury-quartz lamp at a distance of 20 cm for 1 hour at 20°C. It was found that the grafting continued after the irradiation was discontinued. A kinetic equation derived for the graft copolymerization was used to calculate the activation energies of the process and of the growth and breaking of the chains. Orig. art. has 1 formula and 1 figure.

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ACCESSION NR: AP4012591

ASSOCIATION: Instytut khimi polimeriv i monomeriv AN UkrSSR (Institute of the
Chemistry of Polymers and Monomers, AN UkrSSR)

SUBMITTED: 21Jun63

DATE ACQ: 03Mar64

ENCL: 00

SUB CODE: CH

NO REF Sov: 002

OTHER: 014

Card 2/2

СОНЕЦ, Н.П. (Сонец, Н.П.); КУЛИК, Н.В. (Кулик, Н.В.); ЕКАЧАН, Е.А. (Екачан, Е.А.)
и др. (и др.) (СЕРГЕЕВА, Л.Л. (Сергеева, Л.Л.))

Lightproofing of polyamides by means of graft copolymerization.
(МЕРА 1815)
Khim. prom. no.4:9-10 0-9 '64.

L 16011-66 EWP(j)/EWT(m)/T/EWP(v) RM/WW/GS
ACC NR: AT6006235 (A)

SOURCE CODE: UR/0000/65/000/000/0005/0008

AUTHOR: Gnyp, N. P.; Kachan, A. A.; Kulik, N. V.; Chervyatsova, L. L.

ORG: Institute of Chemistry of High Molecular Compounds, AN UkrSSR, Kiev (Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR)

TITLE: Nonadditivity of properties of the constituents of a graft polymer

SOURCE: AN UkrSSR. Modifikatsiya svoystv polimerov i polimernykh materialov (Modification of the properties of polymers and polymeric materials). Kiev, Naukova dumka, 1965, 5-8

TOPIC TAGS: synthetic fiber, graft copolymer, polyacrylonitrile, polyvinyl acetate adhesion, caprone

ABSTRACT: The effect of a grafted layer on the properties of modified caprone fiber was investigated. The properties of graft copolymers were studied by determining the dyeability and adhesiveness of the fibers. Experiments with an acid dye (acid blue) and a basic dye (fuchsin) showed that caprone fiber containing 6% of grafted polyacrylonitrile increases the sorption of acid blue by a factor of 1.5, and that

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ACC NR: AT6006235

3

of fuchsin, by a factor of 4 as compared to the unmodified fiber. Similar results were obtained with fiber modified with polyvinyl acetate. Thus, the dyeability depends little on the nature of the grafted layer or on the type of dye, indicating that the properties of the modified polymer are not determined by the properties of the substrate and of the grafted layer. A similar picture was obtained in a study of the adhesion of caprone fibers to grafted polydivinyl, poly-2-methyl-5-vinylpyridine, and polyisoprene. In the case of SKB rubber, the samples showed a higher adhesion after grafting, but in the case of NK-1 natural rubber, the adhesion of caprone cord not only did not increase, but decreased, and the properties of the modified caprohe fiber were practically independent of the chemical nature of the grafted layer. It is suggested that physical factors associated with a change in the structure of the "substrate" were strongly manifested in the case of natural rubber. Thus, the nonadditivity of the properties of the grafted layer and base polymer is displayed in the dyeability and adhesiveness to natural rubber. Orig. art. has: 1 figure, 3 tables.

SUB. CODE: 07/ SUBM DATE: 060ct65/ ORIG REF: 002/ OTH REF: 001

Card 2/2 10

SHELUD'KO, I.M., kand. tekhn. nauk, dots.; GNYP, P.I. [Hnyp, P.I.],
kand. tekhn. nauk, dots.; MARINICHENKO, V.G. [Marynychenko, V.H.],
kand. filol. nauk; SHVETS, I.T., akademik, otv. red.;
KIL'CHEVSKIY, I.O. [Kil'chevs'kyi, I.O.], kand. filol. nauk, red.-
leksikograf; STETSENKO, V.D., red. izd-va; ROZENTSVEYG, IE.N.
[Rozentsveih, IE.N.], tekhn. red.

[Russian-Ukrainian dictionary on heat and gas engineering.
32,000 terms] Rosiis'ko-ukrains'kyi slovnyk z teplotekhnikiy ta
gazotekhnikiy. 32 000 terminiv. Vidpovidal'nyi red. I.T. Shvets'.
Kyiv, Vyd-vo Akad. nauk URSSR, 1962. 308 p. (MIRA 16:2)

1. Akademiya nauk Ukr. SSSR (for Shvets').
(Russian language--Dictionaries--Ukrainian)
(Heat engineering--Dictionaries)
(Gas engineering--Dictionaries)

GNYP, Pavlo Ivanovich [Hnyp, P.I.]; DOBROKHOTOV, M.M., akademik,
retsenszent; STASIV, M.Yu., kand.ekon. nauk, retsenzent;
MATIJKO, M.M., red.; RAKHLINA, N.P., tekhn. red.

[Development of gasification in the Ukraine] Rozvytok gazy-
fikatsii Ukrayny; istoryko-tehnichnyi narys. Kyiv, Vyd-vo
AN URSR, 1963. 178 p. (MIRA 16:9)

1. AN Ukr.SSR (for Dobrokhotov).
(Ukraine--Gas industry)

KHRENOV, Konstantin Konstantinovich [Khrienov, K.K.]; CNVP Pavel
Ivanovich [ihnyp. P.I.]; CHEPUR, N.D., red. Izd-va;
TUREANVA, N.A., tekhn. red.

Viktor Vasyl'ovych Danylevs'kyi. Kyiv, Vyd-vo AN Ukr. SSR,
1963. 42 p. (MIRA 16:10)
(Danilevskii, Viktor Vasil'evich, 1898-1960)

L 15180-63

EPR(c)/EWT(l)/EWT(m)/BDS

AFFTC/ASD/SSD

Pr-4

RM/WW

ACCESSION NR: AR3003330

8/0058/63/000/005/DO52/D052

6-2

SOURCE: RZh. Fizika, Abs. 5D366

AUTHOR: Vyshnevsky'y, V. N.; Gny'd, R. G.; Pidzy'ra lo, M. S.

TITLE: Investigation of the photoluminescence of anthracene vapor

CITED SOURCE: Visnyk L'viv's'k. un-tu. Ser. fiz., no. 1(8), 1962, 145-148

TOPIC TAGS: anthracene, fluorescence, photoluminescence, quantum yield

TRANSLATION: Apparatus comprising of an ISP-22 quartz spectrograph with a photoelectric attachment, graduated in terms of spectral sensitivity, was used to obtain the energy distribution in the luminescence spectrum of anthracene vapor (I) excited by 3100 \AA light from a mercury lamp with vapor pressure 170 mm Hg and temperature 310°C , under conditions of total absorption of the exciting light by a thin (3 mm) layer of vapor. A correction was introduced for the reabsorption of the luminescence. The spectrum of the vapor of I is shifted relative to the single crystal of I toward the lower wavelengths, and its vibration structure is weakly pronounced. The value of the absolute quantum yield of photoluminescence of vapor of I (0.023) was calculated from the value obtained for the relative luminescence yield of vapor of I (relative to the crystal) and from the literature data on the absolute quantum yield of the crystal of I.

L 33169-66 EWT(1) IJP(c) WW/GG

ACC NR: AR6016215

SOURCE CODE: UR/0058/65/000/011/D067/D067

AUTHOR: Vishnevskiy, V. N.; Gnyp, R. G.; Stefanskiy, I. V.

60

TITLE: Investigation of the refractivity of single crystals NaI-Tl

B

SOURCE: Ref. zh. Fizika, Abs. 11D517

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 529-537

TOPIC TAGS: sodium compound, refractive index, activated crystal, crystal detector, light dispersion, temperature dependence

ABSTRACT: The authors investigated the dispersion of the refractive index of single crystals of NaI-Tl (activator concentration from 7.9×10^{-7} to 4.7×10^{-5} g Tl/g NaI). The dispersion curves were obtained with the aid of the diffraction method of I. V. Obreimov. For the crystals most commonly used (activator concentration $c = 3.6 \times 10^{-5}$ g Tl/g NaI), the dependence of the dispersion curve on the temperature was investigated. [Translation of abstract]

SUB CODE: 20 /

LS
Card 1/1

VISHNEVSKIY, V.N. [Vyshnev's'kiy, V.N.]; GNYP, R.G. [Hnyp, R.E.];
STEFANSKIY, I.V. [Stefans'kiy, I.V.]

Dispersion of NaI - Tl single crystals. Ukr. fiz. zhur. 8
no.5:583-586 My '63. (MIRA 16:8)

1. L'vovskiy gosudarstvennyy universitet im. Franko.

ACC NR: AR6013644

SOURCE CODE: UR/0058/65/000/010/D091/D091

AUTHOR: Vyshnev's'kyy, V. N.; Gnyp, R. G.; Stefans'kyy, I. V.

TITLE: Dispersion of the refracting capacity of synthetic rubies

SOURCE: Ref. zh. Fizika, Abs. 10D670

REF SOURCE: Visnyk L'vivs'k. un-tu. Ser. fiz. L'viv, 1964, 20-24

TOPIC TAGS: ruby optic material, refractive index, synthetic material

TRANSLATION: The dispersion of the refracting capacity of synthetic rubies was measured in the 300-740 nm spectral region for temperatures varying from -190°C to +400°C. Polarized light was used. Dispersion capacity was determined by the diffraction method of I. V. Oreimov. A visual method of determining the index of refraction of crystals at temperatures different from room temperature is introduced. The method is based on the "slipping" on the diffraction pattern with the temperature changes of the sample. The Sellmeier formula approximately describes the experimental curves for the spectral dependence of the indices of refraction for both rays.

SUB CODE: 20,11

Card 1/1

VISHNEVSKIY, V.N. [Vyshnevs'kyi, V.N.]; GNYP, R.G. [Hnyp, R.H.];
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